

## **ABSTRACT**

The present invention is directed to an apparatus, a system and a method for detecting the presence or absence of trace elements in a biological sample using Laser-Induced Breakdown Spectroscopy. The trace elements are used to develop a signature profile which is analyzed directly or compared with the known profile of a standard. In one aspect of the invention, the apparatus, system and method are used to detect malignant cancer cells *in vivo*.

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